IN THE CLAIMS:

Please amend claims 1-43 as follows.

1. (Currently Amended) A method of compensating for a radiation pattern in a radio system, the method comprising:

forming ~~(420)~~ a primary radiation pattern ~~(500)~~ by weighting signals of at least two functional antenna branches of a base station,

~~characterized by~~

disconnecting ~~(440)~~ at least one antenna branch; and

forming ~~(450)~~ a radiation pattern ~~(700)~~ which compensates for the primary radiation pattern ~~(500)~~ by weighting signals of the functional antenna branches.

2. (Currently Amended) A method of weighting signals in a radio system, the method comprising:

weighting signals of at least two functional antenna branches of a base station with primary weights to form a primary radiation pattern ~~(500)~~,

~~characterized by~~

disconnecting at least one antenna branch; and

weighting signals of the functional antenna branches with weights which compensate for the primary weights to form a compensating radiation pattern ~~(700)~~.

3. (Currently Amended) A method according to claim 2, ~~characterized by~~ further comprising weighting signals of the functional antenna branches with previously known weights.

4. (Currently Amended) A method according to claim 2, ~~characterized by~~ further comprising weighting signals of the functional antenna branches with weights which differ from the primary weights.

5. (Currently Amended) A method according to claim 1 or 2, ~~characterized in that~~ wherein the primary radiation pattern ~~(500)~~ is fixed and the compensating radiation pattern ~~(700)~~ is fixed.

6. (Currently Amended) A method according to claim 1 or 2, ~~characterized in that~~ wherein the primary radiation pattern ~~(500)~~ is the radiation pattern used in transmission, the disconnected antenna branch is the transmitting antenna branch, and the compensating radiation pattern ~~(700)~~ is the radiation pattern used in transmission.

7. (Currently Amended) A method according to claim 1 or 2, ~~characterized in that~~ wherein the primary radiation pattern ~~(500)~~ is the radiation pattern used in transmission, the disconnected antenna branch is the transmitting antenna branch, and the compensating radiation pattern ~~(700)~~ is the radiation pattern used in transmission; and

wherein a radiation pattern which is to be used in reception and corresponds to the compensating radiation pattern ~~(700)~~ used in transmission is formed by weighting signals of the receiving antenna branches.

8. (Currently Amended) A method according to claim 1 or 2, ~~characterized in that~~ wherein the primary radiation pattern ~~(500)~~ is the radiation pattern used in reception, the disconnected antenna branch is the receiving antenna

branch, and the compensating radiation pattern ~~(700)~~ is the radiation pattern used in reception.

9. (Currently Amended) A method according to claim 1 or 2, ~~characterized in that~~ wherein the primary radiation pattern ~~(500)~~ is the radiation pattern used in reception, the disconnected antenna branch is the receiving antenna branch, and the compensating radiation pattern ~~(700)~~ is the radiation pattern used in reception; and

wherein a radiation pattern which is to be used in transmission and corresponds to the compensating radiation pattern ~~(700)~~ used in reception is formed by weighting signals of the transmitting antenna branches.

10. (Currently Amended) A method according to claim 1 or 2, ~~characterized by~~ further comprising forming ~~(450)~~ the radiation pattern ~~(700)~~ which compensates for the primary radiation pattern ~~(500)~~ by weighting signals of the functional antenna branches so that compensation occurs in the azimuth direction.

11. (Currently Amended) A method according to claim 1 or 2, ~~characterized by~~ further comprising forming ~~(450)~~ the radiation pattern ~~(700)~~ compensating for the primary radiation pattern ~~(500)~~ by weighting signals of the functional antenna branches so that compensation occurs in the elevation direction.

12. (Currently Amended) A method according to claim 1 or 2, ~~characterized by~~ further comprising forming ~~(450)~~ the compensating radiation pattern ~~(700)~~ by weighting signals of the functional antenna branches with previously known weights.

13. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising forming ~~(450)~~ the compensating radiation pattern ~~(700)~~ by weighting signals of the functional antenna branches with weights which differ from the weights used for forming the primary radiation pattern ~~(500)~~.

14. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising forming ~~(450)~~ the compensating radiation pattern ~~(700)~~ by weighting signals of the functional antenna branches digitally.

15. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising forming ~~(450)~~ the compensating radiation pattern ~~(700)~~ by weighting signals of the functional antenna branches with weights which are based on the configuration of the functional antenna elements in the antenna array.

16. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising forming ~~(450)~~ the compensating radiation pattern ~~(700)~~ by weighting signals of the functional antenna branches with weights which are based on the radiation patterns formed by single antenna elements.

17. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising forming ~~(450)~~ the compensating radiation pattern ~~(700)~~ by weighting signals of the functional antenna branches with weights which are based on the weighting function of the aperture of the antenna array.

18. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising forming ~~(450)~~ the compensating radiation pattern ~~(700)~~ by weighting signals of the functional antenna branches so that the main beams ~~(710-720)~~ of

the compensating radiation pattern ~~(700)~~ overlap at least partly with the main beams ~~(510-520)~~ of the primary radiation pattern ~~(500)~~.

19. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising forming ~~(450)~~ the compensating radiation pattern ~~(700)~~ by weighting signals of the functional antenna branches so that at least one main beam ~~(510-520)~~ of the primary radiation pattern ~~(500)~~ is compensated with at least one main beam ~~(710-720)~~ of the compensating radiation pattern ~~(700)~~.

20. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising forming ~~(450)~~ the compensating radiation pattern ~~(700)~~ by weighting signals of the functional antenna branches so that at least one main beam ~~(710-720)~~ of the primary radiation pattern ~~(500)~~ is compensated with one main beam ~~(510-520)~~ of the compensating radiation pattern ~~(700)~~ and coding of the signals of the compensating main beam ~~(710-720)~~ is the same as the coding of the signals of the main beam ~~(510-520)~~ to be compensated for.

21. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising forming ~~(450)~~ the compensating radiation pattern ~~(700)~~ by weighting signals of the functional antenna branches so that at least one main beam ~~(710-720)~~ of the primary radiation pattern ~~(500)~~ is compensated with one main beam ~~(510-520)~~ of the compensating radiation pattern ~~(700)~~ and the identification signal of the compensating main beam ~~(710-720)~~ is the same as the identification signal of the main beam ~~(510-520)~~ to be compensated for ~~(500)~~.

22. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising forming ~~(450)~~ the compensating antenna beam structure ~~(700)~~ by weighting signals of the functional antenna branches so that the dynamic range of the main beams ~~(710-720)~~ of the compensating radiation pattern ~~(700)~~ is optimized.

23. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising calibrating ~~(460)~~ the functional antenna branches after the compensating radiation pattern ~~(700)~~ has been formed ~~(700)~~.

24. (Currently Amended) A method according to claim 1, ~~characterized by~~ further comprising forming ~~(430)~~ a command for disconnecting at least one antenna branch; and

disconnecting ~~(440)~~ said at least one antenna branch on the basis of the command formed.

25. (Currently Amended) A radio system comprising:

a base station ~~(204)~~ for forming a radio interface of the radio system;

the base station ~~(204)~~ comprises at least two antenna branches ~~(310A, 310B)~~ for establishing a radio link to terminals;

each antenna branch ~~(310A, 310B)~~ comprises at least one antenna element ~~(236, 238)~~ for forming an antenna array ~~(240)~~; and

the base station ~~(204)~~ comprises weighting means ~~(216)~~ for weighting signals of the functional antenna branches ~~(310A, 310B)~~ for forming a primary radiation pattern ~~(500)~~,

~~characterized in that~~

wherein the base station ~~(204)~~ is arranged to disconnect at least one antenna branch ~~(310A, 310B)~~; and

wherein the weighting means ~~(216)~~ are arranged to weight signals of the functional antenna branches ~~(310A, 310B)~~ to form a radiation pattern ~~(700)~~ which compensates for the primary radiation pattern ~~(500)~~.

26. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the base station ~~(204)~~ is arranged to form a fixed primary radiation pattern ~~(500)~~; and

wherein the weighting means ~~(216)~~ are arranged to form a fixed compensating radiation pattern ~~(700)~~.

27. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the antenna branches ~~(310A, 310B)~~ are arranged to transmit a signal;

wherein the weighting means ~~(216)~~ are arranged to weight transmission signals of the antenna branches ~~(310A, 310B)~~;

wherein the base station ~~(204)~~ is arranged to disconnect at least one transmitting antenna branch ~~(310A, 310B)~~; and

wherein the weighting means ~~(216)~~ are arranged to weight the transmission signals of the functional antenna branches ~~(310A, 310B)~~ to form a radiation pattern ~~(700)~~ for transmission which compensates for the primary radiation pattern ~~(500)~~ used for transmission.

28. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the antenna branches ~~(310A, 310B)~~ are arranged to transmit a signal;

wherein the weighting means ~~(216)~~ are arranged to weight transmission signals of the antenna branches ~~(310A, 310B)~~;

wherein the base station ~~(204)~~ is arranged to disconnect at least one transmitting antenna branch ~~(310A, 310B)~~;

wherein the weighting means ~~(216)~~ are arranged to weight transmission signals of the functional antenna branches ~~(310A, 310B)~~ to form a radiation pattern ~~(700)~~ for transmission which compensates for the primary radiation pattern ~~(500)~~ used in transmission; and

wherein the weighting means ~~(216)~~ are also arranged to weight receiving signals of the antenna branches ~~(310A, 310B)~~ so that the radiation pattern for reception corresponds to the compensating radiation pattern ~~(700)~~ used in transmission.

29. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the antenna branches ~~(310A, 310B)~~ are arranged to receive a signal;

wherein the weighting means ~~(216)~~ are arranged to weight reception signals of the antenna branches ~~(310A, 310B)~~;

wherein the base station ~~(204)~~ is arranged to disconnect at least one receiving antenna branch ~~(310A, 310B)~~;

wherein the weighting means ~~(216)~~ are arranged to weight reception signals of the functional antenna branches ~~(310A, 310B)~~ to form a radiation pattern ~~(700)~~ for reception which compensates for the primary radiation pattern ~~(500)~~ used in reception; and

wherein the weighting means ~~(216)~~ are also arranged to weight transmission signals of the functional antenna branches ~~(310A, 310B)~~ so that the radiation pattern formed for transmission corresponds to the compensating radiation pattern ~~(700)~~ used in reception.

30. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight signals of the antenna branches ~~(310A, 310B)~~ so that compensation occurs in the azimuth direction.

31. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight signals of the functional antenna branches ~~(310A, 310B)~~ so that compensation occurs in the elevation direction.

32. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight signals of the functional antenna branches ~~(310A, 310B)~~ with previously known weights to form the compensating radiation pattern ~~(700)~~.

33. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight

signals of the functional antenna branches digitally to form a compensating radiation pattern ~~(700)~~.

34. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight signals of the functional antenna branches ~~(310A, 310B)~~ with weights which are based on the configuration of the functional antenna elements ~~(236, 238)~~ in the antenna array ~~(240)~~.

35. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight signals of the functional antenna branches ~~(310A, 310B)~~ with weights which are based on the radiation patterns formed by single functional antenna elements ~~(236, 238)~~.

36. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight signals of the functional antenna branches ~~(310A, 310B)~~ with weights which are based on the weighting function of the aperture in the antenna array ~~240~~.

37. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight signals of the functional antenna branches ~~(310A, 310B)~~ so that the main beams ~~(710-720)~~ of the compensating radiation pattern ~~(700)~~ overlap at least partly with the main beams ~~(510-520)~~ of the primary radiation pattern ~~(500)~~.

38. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight

signals of the functional antenna branches ~~(310A, 310B)~~ so that at least one main beam ~~(510-520)~~ of the primary radiation pattern ~~(500)~~ is compensated with at least one main beam ~~(710-720)~~ of the compensating radiation pattern ~~(700)~~.

39. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight signals of the functional antenna branches ~~(310A, 310B)~~ so that at least one main beam ~~(510-520)~~ of the primary radiation pattern ~~(500)~~ is compensated with one main beam ~~(710-720)~~ of the compensating radiation pattern ~~(700)~~ and the coding of the signals of each compensating main beam ~~(710-720)~~ is the same as the coding of the signals of the main beam ~~(510-520)~~ to be compensated for.

40. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight signals of the functional antenna branches ~~(310A, 310B)~~ so that at least one main beam ~~(510-520)~~ of the primary radiation pattern ~~(500)~~ is compensated with one main beam ~~(710-720)~~ of the compensating radiation pattern ~~(700)~~ and the identification signal of each compensating main beam ~~(710-720)~~ is the same as the identification signal of the main beam ~~(510-520)~~ to be compensated for.

41. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the weighting means ~~(216)~~ are arranged to weight signals of the functional antenna branches ~~(310A, 310B)~~ so that the dynamic range of the main beams ~~(710-720)~~ of the compensating radiation pattern ~~(700)~~ is optimized.

42. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the base station ~~(204)~~ comprises means ~~(210, 242, 244)~~ for calibrating the antenna branches ~~(310A, 310B)~~.

43. (Currently Amended) A radio system according to claim 25, ~~characterized in that~~ wherein the base station ~~(204)~~ is arranged to form a command for disconnecting at least one antenna branch ~~(310A, 310B)~~; and

wherein the base station is arranged to disconnect said at least one antenna branch ~~(310A, 310B)~~ on the basis of the command formed.

Please add new claims 44-62 as follows:

44. (New) A base station of a radio system, comprising:

at least two antenna branches for establishing a radio link to terminals, each antenna branch comprising at least one antenna element for forming an antenna array;

weighting means for weighting signals of the functional antenna branches for forming a primary radiation pattern,

wherein the base station is arranged to disconnect at least one antenna branch; and

wherein the weighting means are arranged to weight signals of the functional antenna branches to form a radiation pattern which compensates for the primary radiation pattern.

45. (New) A base station according to claim 44, wherein the base station is arranged to form a fixed primary radiation pattern; and

wherein the weighting means are arranged to form a fixed compensating radiation pattern.

46. (New) A base station according to claim 44, wherein the antenna branches are arranged to transmit a signal;

wherein the weighting means are arranged to weight transmission signals of the antenna branches;

wherein the base station is arranged to disconnect at least one transmitting antenna branch; and

wherein the weighting means are arranged to weight the transmission signals of the functional antenna branches to form a radiation pattern for transmission which compensates for the primary radiation pattern used for transmission.

47. (New) A base station according to claim 44, wherein the antenna branches are arranged to transmit a signal;

wherein the weighting means are arranged to weight transmission signals of the antenna branches;

wherein the base station is arranged to disconnect at least one transmitting antenna branch;

wherein the weighting means are arranged to weight transmission signals of the functional antenna branches to form a radiation pattern for transmission which compensates for the primary radiation pattern used in transmission; and

wherein the weighting means are also arranged to weight receiving signals of the antenna branches so that the radiation pattern for reception corresponds to the compensating radiation pattern used in transmission.

48. (New) A base station according to claim 44, wherein the antenna branches are arranged to receive a signal;

wherein the weighting means are arranged to weight reception signals of the antenna branches;

wherein the base station is arranged to disconnect at least one receiving antenna branch;

wherein the weighting means are arranged to weight reception signals of the functional antenna branches to form a radiation pattern for reception which compensates for the primary radiation pattern used in reception; and

wherein the weighting means are also arranged to weight transmission signals of the functional antenna branches so that the radiation pattern formed for transmission corresponds to the compensating radiation pattern used in reception.

49. (New) A base station according to claim 44, wherein the weighting means are arranged to weight signals of the antenna branches so that compensation occurs in the azimuth direction.

50. (New) A radio system according to claim 44, wherein the weighting means are arranged to weight signals of the functional antenna branches so that compensation occurs in the elevation direction.

51. (New) A base station according to claim 44, wherein the weighting means are arranged to weight signals of the functional antenna branches with previously known weights to form the compensating radiation pattern.

52. (New) A base station according to claim 44, wherein the weighting means are arranged to weight signals of the functional antenna branches digitally to form a compensating radiation pattern.

53. (New) A base station according to claim 44, wherein the weighting means are arranged to weight signals of the functional antenna branches with weights which are based on the configuration of the functional antenna elements in the antenna array.

54. (New) A base station according to claim 44, wherein the weighting means are arranged to weight signals of the functional antenna branches with weights which are based on the radiation patterns formed by single functional antenna elements.

55. (New) A base station according to claim 44, wherein the weighting means are arranged to weight signals of the functional antenna branches with weights which are based on the weighting function of the aperture in the antenna array.

56. (New) A base station according to claim 44, wherein the weighting means are arranged to weight signals of the functional antenna branches so that the main beams of the compensating radiation pattern overlap at least partly with the main beams of the primary radiation pattern.

57. (New) A base station according to claim 44, wherein the weighting means are arranged to weight signals of the functional antenna branches so that at least one main

beam of the primary radiation pattern is compensated with at least one main beam of the compensating radiation pattern.

58. (New) A base station according to claim 44, wherein the weighting means are arranged to weight signals of the functional antenna branches so that at least one main beam of the primary radiation pattern is compensated with one main beam of the compensating radiation pattern and the coding of the signals of each compensating main beam is the same as the coding of the signals of the main beam to be compensated for.

59. (New) A base station according to claim 44, wherein the weighting means are arranged to weight signals of the functional antenna branches so that at least one main beam of the primary radiation pattern is compensated with one main beam of the compensating radiation pattern and the identification signal of each compensating main beam is the same as the identification signal of the main beam to be compensated for.

60. (New) A base station according to claim 44, wherein the weighting means are arranged to weight signals of the functional antenna branches so that the dynamic range of the main beams of the compensating radiation pattern is optimized.

61. (New) A base station according to claim 44, wherein the base station comprises means for calibrating the antenna branches.

62. (New) A base station according to claim 44, wherein the base station is arranged to form a command for disconnecting at least one antenna branch; and

wherein the base station is arranged to disconnect said at least one antenna branch on the basis of the command formed.